

## FINAL REPORT

Bethel Post-Season Subsistence Fisheries Harvest Surveys, 2000

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U.S. Fish and Wildlife Service, Region 7

Office of Subsistence Management

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## Introduction

The Division of Subsistence (Division), Alaska Department of Fish and Game (Department) directed a study of the Bethel area through the work of the Orutsararmuit Native Council (ONC) in Bethel to conduct subsistence fish harvest surveys of households in the community of Bethel during October and November 2000. The purpose of the survey was to contact Bethel households to gather information about their harvest of fish, identify households that participated in the subsistence fishery, estimate the number of fish harvested by the community, identify gear used for subsistence fishing and describe the quality of subsistence salmon fishing for salmon during 2000. The results of those survey efforts are included in this report.

## Methods

During early September, Division staff prepared a job description with the assistance of ONC staff. Division staff also reviewed the applications submitted by the various applicants, participated in interviewing the applicants and worked with ONC staff to decide which applicants seemed best qualified for the technician jobs. After orienting the newly hired technicians to the project, explaining the purposes and objectives of the project, the research methods used, the voluntary involvement of the respondents, and the need for confidentiality of individual household data, Division staff provided hands on training by accompanying the technicians during the initial surveys.

The survey focused on salmon harvested during the period from May through September 2000, and non-salmon species harvested during the period October 1, 1999 through September 30, 2000. The Division developed the survey instrument used in the project and provided copies of the survey instrument and clipboards to the ONC survey staff (Appendix A). Division staff directed the technicians in planning how survey efforts in Bethel would proceed, determined the average number of successful surveys that each needed to complete each day in order to complete the project on time, and assigned the technicians specific areas of the community to avoid the possibility of households being surveyed multiple times by different staff. Staff monitored progress of the survey efforts throughout the project, routinely reviewed the survey forms to check for completeness, and met frequently with each technician individually to discuss any problem areas and correct specific errors and omissions on the survey forms.

Survey efforts were directed to contact every housing unit in Bethel. The survey technicians used a map of Bethel, originally developed by the Bethel Fire Department with corrections added by the Division, to help orient them to the community and locate specific addresses. This was an important element because the survey forms required a physical house address be recorded on the survey form. Residents of many households were not at home when staff made the initial visit. The survey technicians made at least 3 survey attempts, scheduled at different weeks and at different times. On the final attempt, survey technicians left a postage paid, harvest reply postcard at the house.

The survey technicians started surveying households in October and continued through the third week of November. After checking each survey form for completeness and legibility, Division staff provided the surveys to Division of Subsistence Data Management staff in Anchorage for data entry and analysis and worked through several drafts of the analysis to eliminate any data entry or analysis errors. Data entry was completed in early March 2001 and the analysis completed in early May 2001.

## Results

All of the occupied housing units in Bethel were identified and added to the ADFG database with a physical address. Survey results indicate that there were a total of 1,739 occupied units (houses plus apartments) in Bethel. Face to face surveys were successfully completed at 1,221 of these units. Because the residents of some units were not at home on the initial visit, staff went to some households at least three times during the course of their survey efforts. On the third visit, if the residents were still not at home, a postcard survey was left at the house.

### Participation in Subsistence Fishing

A total of 548 households reported harvesting fish (salmon or other species) during the study period. Expanded to include a proportion of the households not surveyed, 768 households are estimated to participated in the subsistence fishery. Household participation rates in subsistence fishing activities was highest for the various salmon species (Table 1). A total of 425 households reported fishing for chinook salmon. Approximately 300 households reported harvesting chum, sockeye and coho salmon. Only 21 households reported harvesting pink salmon. Of non-salmon species, smelt, whitefish and northern pike were the species most frequently reported. Relatively few households reported harvesting lake trout.

### Harvest Amounts

As reported, not all households were available when the surveys were being done. Based on the 1,221 Bethel households that were surveyed, total community estimates were made of the amount of each fish species harvested for subsistence use during the study period. An estimated 59,529 salmon and 15,849 non-salmon fish (excluding blackfish and smelt) were harvested. Chinook salmon represented 38 percent of the total salmon harvest, coho salmon 23 percent, sockeye 21 percent, and chum 18 percent. Whitefish and northern pike each represented about one-third of the total non-salmon harvest, in numbers of fish (excluding smelt and blackfish, Table 1). Approximately 1,600 gallons of smelt and 1,200 gallons of blackfish were harvested.

### Harvest Gear

The majority of the salmon harvested (86 percent) were caught with drift gillnets (Table 2). Set gillnets were used to harvest approximately 12 percent of the salmon caught and are more commonly used when fishers are targeting chinook salmon early in the run. Large mesh gear continues to be used by a majority of subsistence fishers targeting chinook salmon. A total of 315 households provided information on the mesh size of gillnets used when harvesting chinook salmon. Seventy-seven percent (242 households) reported using gill nets having 8-inch or greater mesh size. Approximately 1,300 salmon were harvested with hook and line gear. Most (83 percent) of the salmon harvested with hook and line gear were coho salmon. A total of 1,053 coho, 130 chinook, 57 sockeye, 28 chum and 4 pink salmon were harvested with hook and line gear. Gear type was unreported for 13 chinook salmon.

In contrast to salmon, drift gillnets were used to harvest only three percent of non-salmon species. Approximately 25 percent of the non-salmon fish were harvested with rod and reel gear, 33 percent were caught by hook and line through the ice, 21 percent with set gillnet in open water, and 18 percent caught with set gillnet under the ice. Smelt were harvested exclusively with dipnets. Blackfish were caught with small, locally made fishtraps called *taluyat*.

Whitefish and sheefish were the predominant non-salmon species harvested with drift gillnets. These fish were harvested primarily when fishers were drifting for salmon. Sheefish are typically caught while fishers target chinook salmon in late May and early June. Whitefish are frequently caught in August when fishers are targeting coho salmon. Setnets used during

periods of open water were used primarily for harvesting whitefish, however, pike, burbot and sheefish were also harvested in set gillnets. Gillnets set under the ice during winter (November through March) caught mostly whitefish. A few burbot, pike, sheefish and grayling were also harvested with this gear. Fishing with hook and line gear through the ice resulted in a harvest of 5,208 fish, composed primarily of northern pike, burbot and whitefish. A few sheefish (47) and grayling (9) were also taken. Subsistence harvests with hook and line gear in open water resulted in a harvest of approximately 1,200 whitefish, 1,400 northern pike, 540 burbot, 124 sheefish, 246 grayling, 258 Dolly Varden, 234 rainbow trout, and 38 lake trout.

#### Hook and Line Harvest Locations

Harvest location information was asked of households that used subsistence hook and line gear to catch fish. Harvest location information was not asked of fish caught with other gear. Based on observations by the author over the past 20 years, salmon are generally harvested with gillnets primarily from waters of the Kuskokwim River located between Akiachak and Napakiak. Other species caught by gillnet in open water are taken in the same general area. Gillnets set under the ice are utilized primarily in the area from Oscarville upstream to the upstream end of Steamboat Slough located near Bethel. Fishing for smelt generally occurs in the Kuskokwim River from Napakiak to the lower end of Kuskokuak Slough. Blackfish are caught in tundra streams generally within a 10 mile radius from Bethel.

Bethel residents focus much of their summer rod and reel fishing efforts on tributaries in the lower Kuskokwim area, such as the Kwethluk, Kasigluk and Kisaralik rivers. Some families travel to Quinhagak to fish for salmon. Individuals commonly harvest fish with rod and reel gear in association with summer berry picking activities and late summer - early fall hunting activities throughout the Kuskokwim River drainage. Fishing from the Bethel seawall is also a popular activity during the summer months and affords people an opportunity to harvest fish for subsistence use without requiring the investment of a boat and motor or a gillnet. Likewise, during winter, some individuals walk to fishing areas near Bethel or drive on the Kuskokwim River ice road to access fishing areas near the Johnson and Gweek rivers. The primary harvest areas used by subsistence fishers with hook and line gear included the Kwethluk River drainage, the mouth of the Johnson River, the Bethel seawall, and the Kisaralik River drainage.

The primary salmon harvest areas included the Kwethluk River (746 salmon), Kisaralik River (154 salmon), Kanektok River (124 salmon), and the Kasigluk River (123 salmon). Residents also reported harvesting salmon for other areas including the Aniak River, Kenai River, Bethel seawall, the main Kuskokwim River and from places near the communities of Platinum and Valdez. Most of the coho salmon harvest came from the Kwethluk River (707). Nearly half of the rod and reel gear chinook harvest came from the Kanektok River. A few pink salmon were harvested in the Kisaralik and Kwethluk rivers (Table 3).

Nearly 3,000 northern pike were harvest with hook and line gear through the ice near the mouth of the Johnson River, located 18 miles downstream from Bethel. More than 1,000 burbot, 166 whitefish and 150 pike were caught through the ice in the Kuskokwim River close to Bethel. Winter catches from the Bethel seawall included 155 burbot and 146 whitefish. Catches from the Bethel seawall during periods of open water when rod and reel gear could be used amounted to 468 whitefish and 293 burbot. Harvest areas for other non-salmon species such as sheefish, Arctic grayling, Dolly Varden, rainbow trout and lake trout are shown in Table 3.

#### Quality of Salmon Fishing

During 2000, the return of chinook and chum salmon to the Kuskokwim River drainage was weak. During the fishing season, fishers throughout the Kuskokwim drainage, including those in

Bethel, reported that they were having difficulty harvesting the usual amounts of chinook salmon. During the post-season survey, households that reported subsistence fishing for salmon were asked to rate the quality of their subsistence salmon fishing for each species of salmon they tried to harvest. A total of 415 Bethel households responded to this question. Most Bethel households responded that subsistence salmon fishing during 2000 was either average or poor (Table 4). Only 20 percent reported that subsistence fishing for chinook salmon was very good, however 27 percent of households responded that subsistence fishing for coho salmon was very good.

Table 5 shows the reasons that Bethel households reported subsistence salmon fishing as poor. More households reported "poor fishing" for chinook salmon than for any other species of salmon. This is probably due to the fact that most households prefer chinook salmon than other species and because people were not prepared for or expecting a poor chinook return during 2000. The most common reason given for why salmon fishing was poor included reasons such as "there were few fish this year, " or "no fish". This same pattern was also evident among subsistence fishers in other Kuskokwim River communities where the Division conducted surveys. Only two households indicated that regulations prevented them from harvesting salmon.

Appendix A. Bethel post-season survey instrument, 2000

KUSKOKWIM AREA

If salmon are from Yukon, make a note of it.

Household Street Address:

Street Name

House Number

Apartment Number

**BETHEL SUBSISTENCE HOUSEHOLD SURVEY: Alaska Fish and Game Subsistence and Orutsaramiut Native Council**

Household participation is voluntary, Survey forms will be turned in to Alaska Dept of Fish and Game, Subsistence. Household data will not be released without permission of Household Head.

Covering Harvest Periods of: 1 October 1999 - 30 September 2000.

Interviewer: MF EH

Survey Date: Oct. Nov. 2000

1. Did this household catch salmon for subsistence use this year ? ☐ YES ☐ NO ( If NO, Go to 2. Then go to back side for other fish ).

2. Does this household usually subsistence fish for salmon ? ☐ YES ☐ NO ( We will mail a salmon calendar to those who do )

**FOR SALMON FISHING HOUSEHOLDS ONLY**

" We would like to get an estimate of how many salmon your household harvested this past year."

3. Did you use a salmon harvest calendar? ☐ YES ☐ NO ( If NO then get estimates , Gear types, Rod and Reel harvest locations)

Can I have the calendar? ☐ Mailed it in ( If we don't have it, it may be lost. Get estimates now. )

4. Are all of the salmon you harvested on the calendar ? ☐ YES ☐ NO ( If NO then get estimates of additional fish )

If YES, Place a check mark for each gear type used,

Get mesh size for Chinook,

Ask for number harvested and locations for salmon caught with Rod and Reel.

SPECIES	HARVESTED Y/N	NUMBER OF SALMON HOUSEHOLD HARVESTED FOR SUBSISTENCE								KEY TO ROD AND REEL HARVEST LOCATIONS		
		SET NET (number)	Mesh Size Inches	DRIFT NET (number)	Mesh Size Inches	OTHER GEAR		Fish Kept From Commercial Fishing (number)	ROD AND REEL HARVESTS		Location	
						Write in gear type	Number (of fish)		(number)			
<b>CHINOOK SALMON</b> Taryaqvak												A. Kuskokwim River
<b>CHUM SALMON</b> Iqalluk												B. Kanektok River drainage
<b>SOCKEYE SALMON</b> Sayak												C. Kwethluk River drainage
<b>COHO SALMON</b> Qakiyak												D. Kasigluk River drainage
<b>PINK SALMON</b> Amaqaayak												E. Kisaralik River drainage
												F. Aniak River drainage
												G. Holitna River drainage
												H. Stony River drainage
												I. Hoholtna River drainage
												J. Goodnews River drainage

5. How was subsistence salmon fishing for your household this year ?

Kings: ☐ Very Good ☐ Average ☐ Poor If poor, Why ? \_\_\_\_\_

Chums: ☐ Very Good ☐ Average ☐ Poor If poor, Why ? \_\_\_\_\_

Sockeye (reds) ☐ Very Good ☐ Average ☐ Poor If poor, Why ? \_\_\_\_\_

Coho (silvers) ☐ Very Good ☐ Average ☐ Poor If poor, Why ? \_\_\_\_\_

ADFG Subsistence Bethel, Michael Coffing 543-3100

THANK YOU

Appendix A. Bethel post-season survey instrument, 2000, continued



**KUSKOKWIM AREA**

**SUBSISTENCE FISHING HOUSEHOLD SURVEY: Alaska Fish and Game Subsistence and Orutsaramiut Native Council**

Participation is voluntary, Survey forms will be turned in to Alaska Dept of Fish and Game, Subsistence. Household data will not be released without permission of Household Head.  
Covering Harvest Periods of: 1 October 1999 - 30 September 2000.

**FISH OTHER THAN SALMON**

\* Use CF if caught while commercial fishing and used for Subsistence

SPECIES	HARVESTED Y/N	NUMBER OF FISH HOUSEHOLD HARVESTED FOR SUBSISTENCE						KEY TO HARVEST LOCATIONS	
		SET NET (number)	DRIFT NET (number)	NET UNDER ICE (number)	OTHER GEAR *		HOOING Thru Ice (number)		ROD & REEL Open water (number)
					Write in gear type	Number (of fish)			
<b>NORTHERN PIKE</b>									A. Kuskokwim River
Luquuyak: LOCATION									B. Kanektok River drainage
<b>BURBOT</b>									C. Kwethluk River drainage
(lush): LOCATION									D. Kasigluk River drainage
<b>WHITEFISH</b>									E. Kisaralik River drainage
LOCATION									F. Aniak River drainage
<b>SHEEFISH</b>									G. Holitna River drainage
Cliq: LOCATION									H. Stony River drainage
<b>GRAYLING</b>									I. Hoholtna River drainage
Culugpauk: LOCATION									J. Goodnews River drainage
<b>DOLLY VARDEN</b>									K. Bethel Seawall
Yugyatk: LOCATION									L. Mouth of Johnson River
<b>RAINBOW TROUT</b>									M. In Johnson River drainage
Talaariq: LOCATION									O. Mouth of Gweek River
<b>LAKE TROUT</b>									P. In Geewk River drainage
Cikigniq: LOCATION									R. Kialik River drainage
<b>BLACKFISH</b>					Taluyaq				S. Atchuelinguk River (Yukon)
						GAL			T. Other Yukon Areas
<b>SMELT</b>					Dipnet				W.
						GAL			X.
									Y.
									Z.

" We would like to mail you a summary of this survey and a subsistence fishing calendar in the spring."

Household Name: \_\_\_\_\_

Household PO Box Number: \_\_\_\_\_

ADFG Subsistence Bethel, Michael Coffing 543-3100

THANK YOU

Table 1. Bethel Post-Season Subsistence Fish Harvest Surveys, 2000

Species	REPORTED		ESTIMATED	
	Number of Households Fished	Number of Fish Harvested	Number of Households Fished	Number of Fish Harvested
Chinook salmon	425	17,325	559	22,515
Chum salmon	304	8,178	392	10,616
Sockeye salmon	340	9,658	434	12,536
Coho salmon	321	10,552	434	13,794
Pink salmon	21	35	29	68
Northern Pike	103	3,586	147	5,108
Burbot	81	1,762	115	2,509
Whitefish	128	4,305	182	6,132
Sheefish	89	904	127	1,288
Grayling	34	190	48	270
Dolly Varden	33	184	47	262
Rainbow Trout	32	170	46	242
Lake Trout	5	27	7	38
Blackfish	26	839 gallons	37	1,196 gallons
Smelt	139	1,142 gallons	198	1,626 gallons

SOURCE: Alaska Department of Fish and Game, Division of Subsistence and Orutsaramiut Native Council, Household Surveys, 2001.

Table 2. Estimated Number of Fish Harvested for Subsistence Use by Bethel Households

Species	Estimated Number of Households Harvesting *	Estimated Number of Fish Harvested for Subsistence **						TOTAL
		Set Net	Drift Net	Net Under Ice	Other Gear	Hooking Thru Ice	Hook and Line (Open water)	
Chinook	559	3,593	18,779	0	13	0	130	22,515
Chum	392	1,172	9,416	0	0	0	28	10,616
Sockeye	434	1,533	10,946	0	0	0	57	12,536
Coho	434	723	12,018	0	0	0	1,053	13,794
Pink	29	19	45	0	0	0	4	68
SALMON		7,040	51,204	0	13	0	1,272	59,529
Northern Pike	147	235	3	177	0	3,326	1,367	5,108
Burbot	115	132	17	312	0	1,508	540	2,509
Whitefish	182	2,195	275	2,139	0	318	1,205	6,132
Sheefish	127	772	171	174	0	47	124	1,288
Grayling	48	1	0	14	0	9	246	270
Dolly Varden	47	1	3	0	0	0	258	262
Rainbow Trout	46	7	3	0	0	0	234	242
Lake Trout	7	0	0	0	0	0	38	38
NON-SALMON		3,343	472	2,816	0	5,208	4,012	15,849
Blackfish	37	<u>Fishtrap</u> 1,196 Gallons						
Smelt	198	<u>Dipnet</u> 1,626 Gallons						

SOURCE: Alaska Department of Fish and Game, Division of Subsistence and Orutsaramiut Native Council, Household Surveys, 2001.

Note: Salmon harvest data are for summer 2000. Data for other species are from 1 October 1999 to 30 September 2000.

\*Household number expanded within strata from household surveys.

\*\* Estimates of salmon harvest by gear types based on gear distribution of face to face survey data and estimated total harvest from all data sources (household surveys, calendars, postcards).

Table 3. Harvest locations of fish caught with subsistence hook and line gear, Bethel, 2000.

Species	Harvest Location	Estimated Number of Fish Harvested by Gear Type	
		Rod and Reel	Hooking Through Ice
Chinook	Kanektok River Drainage	58.63	-
Chinook	Kasigluk River Drainage	6.55	-
Chinook	Kenai River	1.79	-
Chinook	Kisaralik River Drainage	24.30	-
Chinook	Kwethluk River Drainage	36.94	-
Chinook	Unknown	1.79	-
Chum	Aniak River Drainage	3.60	-
Chum	Kanektok River Drainage	12.28	-
Chum	Kisaralik River Drainage	12.13	-
Coho	Bethel Seawall	4.97	-
Coho	Kanektok River Drainage	32.67	-
Coho	Kasigluk River Drainage	117.16	-
Coho	Kenai River	19.32	-
Coho	Kisaralik River Drainage	109.96	-
Coho	Kuskokwim River	45.63	-
Coho	Kwethluk River Drainage	707.44	-
Coho	Platinum	7.58	-
Coho	Valdez	8.28	-
Pink	Kisaralik River Drainage	2.66	-
Pink	Kwethluk River Drainage	1.34	-
Sockeye	Kanektok River Drainage	21.24	-
Sockeye	Kenai River	16.16	-
Sockeye	Kisaralik River Drainage	7.18	-
Sockeye	Kwethluk River Drainage	10.77	-
Sockeye	Unknown	1.65	-
Arctic Grayling	Aniak River Drainage	2.85	-
Arctic Grayling	Copper River	4.27	-
Arctic Grayling	Eek River	4.27	-
Arctic Grayling	George River	4.27	-
Arctic Grayling	Hoholtna River Drainage	14.24	-
Arctic Grayling	Holitna River Drainage	8.55	-
Arctic Grayling	Kasigluk River Drainage	28.48	-
Arctic Grayling	Kisaralik River Drainage	-	8.55
Arctic Grayling	Kisaralik River Drainage	28.48	-

Table 3. Harvest locations of fish caught with subsistence hook and line gear, Bethel, 2000.  
continued

Species	Harvest Location	Estimated Number of Fish Harvested by Gear Type	
		Rod and Reel	Hooking Through Ice
Arctic Grayling	Kuskokwim River	5.70	-
Arctic Grayling	Kwethluk River Drainage	68.36	-
Arctic Grayling	Nishlik Lake	14.24	-
Arctic Grayling	Oskawalik River	34.18	-
Arctic Grayling	Platinum	5.70	-
Arctic Grayling	Tuluksak River	19.94	-
Arctic Grayling	Unknown	2.85	-
Burbot	Bethel Seawall	-	155.24
Burbot	Bethel Seawall	293.39	-
Burbot	Kuskokwim River	-	1,110.91
Burbot	Kuskokwim River	172.33	-
Burbot	Kwethluk River Drainage	-	85.45
Burbot	Kwethluk River Drainage	42.73	-
Burbot	Mouth of Gweek River	21.36	-
Burbot	Mouth of Johnson River	-	113.94
Burbot	Mouth of Johnson River	7.12	-
Dolly Varden	Kasigluk River Drainage	48.42	-
Dolly Varden	Kisaralik River Drainage	89.73	-
Dolly Varden	Kuskokwim River	9.97	-
Dolly Varden	Kwethluk River Drainage	24.21	-
Dolly Varden	Mouth of Johnson River	1.42	-
Dolly Varden	Nelson Island	2.85	-
Dolly Varden	Nishlik Lake	1.42	-
Dolly Varden	Oskawalik River	17.09	-
Dolly Varden	Platinum	2.85	-
Dolly Varden	Tuluksak River	1.42	-
Lake Trout	Arolik Lake	8.55	-
Lake Trout	Hoholitna River Drainage	2.85	-
Lake Trout	Kisaralik River Drainage	4.27	-
Lake Trout	Nishlik Lake	8.55	-
Lake Trout	Unknown	14.24	-
Northern Pike	Aniak River Drainage	19.94	-
Northern Pike	Atchuelinguk River (Yukon)	-	7.12
Northern Pike	George River	31.33	-
Northern Pike	Gweek River Drainage	-	4.27

Table 3. Harvest locations of fish caught with subsistence hook and line gear, Bethel, 2000.  
continued

Species	Harvest Location	Estimated Number of Fish Harvested by Gear Type	
		Rod and Reel	Hooking Through Ice
Northern Pike	Gweek River Drainage	89.73	-
Northern Pike	Holitna River Drainage	38.45	-
Northern Pike	Johnson River Drainage	-	353.21
Northern Pike	Johnson River Drainage	156.67	-
Northern Pike	Kasigluk River Drainage	142.42	-
Northern Pike	Kisaralik River Drainage	81.18	-
Northern Pike	Kuskokwim River	-	150.97
Northern Pike	Kuskokwim River	135.30	-
Northern Pike	Kwethluk River Drainage	-	55.55
Northern Pike	Kwethluk River Drainage	15.67	-
Northern Pike	Mouth of Gweek River	142.42	-
Northern Pike	Mouth of Johnson River	-	2,708.91
Northern Pike	Mouth of Johnson River	485.67	-
Northern Pike	Other Yukon Areas	-	42.73
Northern Pike	Takslesluk Lake (Long Lake)	28.48	-
Northern Pike	Unknown	-	4.27
Rainbow Trout	Goodnews River Drainage	21.36	-
Rainbow Trout	Kanektok River Drainage	1.42	-
Rainbow Trout	Kasigluk River Drainage	42.73	-
Rainbow Trout	Kisaralik River Drainage	82.61	-
Rainbow Trout	Kuskokwim River	4.27	-
Rainbow Trout	Kwethluk River Drainage	81.18	-
Sheefish	Aniak River Drainage	2.85	-
Sheefish	Bethel Seawall	-	2.85
Sheefish	Holitna River Drainage	4.27	-
Sheefish	Johnson River Drainage	-	15.67
Sheefish	Johnson River Drainage	7.12	-
Sheefish	Kuskokwim River	-	28.48
Sheefish	Kuskokwim River	82.61	-
Sheefish	Kwethluk River Drainage	1.42	-
Sheefish	Mouth of Johnson River	25.64	-
Whitefish	Bethel Seawall	-	146.70
Whitefish	Bethel Seawall	468.58	-
Whitefish	Kasigluk River Drainage	32.76	-

Table 3. Harvest locations of fish caught with subsistence hook and line gear, Bethel, 2000.  
continued

Species	Harvest Location	Estimated Number of Fish Harvested by Gear Type	
		Rod and Reel	Hooking Through Ice
Whitefish	Kialik River Drainage	284.85	-
Whitefish	Kuskokwim River	-	166.64
Whitefish	Kuskokwim River	252.09	-
Whitefish	Kwethluk River Drainage	19.94	-
Whitefish	Mouth of Gweek River	4.27	-
Whitefish	Mouth of Johnson River	-	4.27
Whitefish	Unknown	142.42	-

SOURCE: Alaska Department of Fish and Game, Division of Subsistence and Orutsaramiut Native Council, Household Surveys, 2001

Table 4. Quality of Subsistence Salmon Fishing, Bethel, 2000

Species	Percent of Households Reporting Quality of Subsistence Fishing		
	Very Good	Average	Poor
Chinook	20	40	40
Chum	18	43	39
Sockeye	23	47	30
Coho	27	45	28

SOURCE: Alaska Department of Fish and Game, Division of Subsistence and Orutsaramiut Native Council, Household Surveys, 2001.

Table 5. Reasons given by Bethel households why subsistence fishing during 2000 was poor.

Reason for "Poor" quality fishing	Chinook	Chum	Sockeye	Coho	All Salmon
Few Salmon Returned	107	32	24	21	184
Regulations	2	0	0	0	2
Personal	7	3	3	4	17
Environmental (high water etc)	0	0	0	0	0
Working/Busy	3	2	1	0	6
No Harvest Gear (net, boat etc)	7	2	3	3	15
Unknown	32	11	2	3	48
Total	158	50	33	31	272

SOURCE: Alaska Department of Fish and Game, Division of Subsistence and Orutsaramiut Native Council, Household Surveys, 2001.